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JC841 U.S. PTO

**UTILITY PATENT APPLICATION TRANSMITTAL
(Small Entity)***(Only for new nonprovisional applications under 37 CFR 1.53(b))*Docket No.
AAC-100US

Total Pages in this Submission

TO THE ASSISTANT COMMISSIONER FOR PATENTS**Box Patent Application
Washington, D.C. 20231**

Transmitted herewith for filing under 35 U.S.C. 111(a) and 37 C.F.R. 1.53(b) is a new utility patent application for an invention entitled:

METHOD AND APPARATUS FOR MANAGING DATA IN A BUSINESS TO BUSINESS ENVIRONMENT

and invented by:

Joseph H. Holland and Mark W. Byrd**If a CONTINUATION APPLICATION, check appropriate box and supply the requisite information:**☒ **Continuation** ☐ **Divisional** ☐ **Continuation-in-part (CIP)** of prior application No.: _____

Which is a:

☒ **Continuation** ☐ **Divisional** ☐ **Continuation-in-part (CIP)** of prior application No.: _____

Which is a:

☒ **Continuation** ☐ **Divisional** ☐ **Continuation-in-part (CIP)** of prior application No.: _____

Enclosed are:

Application Elements

1. ☒ Filing fee as calculated and transmitted as described below
2. ☒ Specification having 31 pages and including the following:
 - a. ☒ Descriptive Title of the Invention
 - b. ☐ Cross References to Related Applications *(if applicable)*
 - c. ☐ Statement Regarding Federally-sponsored Research/Development *(if applicable)*
 - d. ☐ Reference to Microfiche Appendix *(if applicable)*
 - e. ☒ Background of the Invention
 - f. ☒ Brief Summary of the Invention
 - g. ☒ Brief Description of the Drawings *(if drawings filed)*
 - h. ☒ Detailed Description
 - i. ☒ Claim(s) as Classified Below
 - j. ☒ Abstract of the Disclosure

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09/585057

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Application Elements (Continued)

3. ☒ Drawing(s) *(when necessary as prescribed by 35 USC 113)*

a. ☐ Formal b. ☒ Informal Number of Sheets 28

4. ☒ Oath or Declaration

a. ☐ Newly executed *(original or copy)* ☒ Unexecuted

b. ☐ Copy from a prior application (37 CFR 1.63(d)) *(for continuation/divisional application only)*

c. ☐ With Power of Attorney ☐ Without Power of Attorney

d. ☐ DELETION OF INVENTOR(S)

Signed statement attached deleting inventor(s) named in the prior application,
see 37 C.F.R. 1.63(d)(2) and 1.33(b).

5. ☐ Incorporation By Reference *(usable if Box 4b is checked)*

The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

6. ☐ Computer Program in Microfiche

7. ☐ Genetic Sequence Submission *(if applicable, all must be included)*

a. ☐ Paper Copy

b. ☐ Computer Readable Copy

c. ☐ Statement Verifying Identical Paper and Computer Readable Copy

Accompanying Application Parts

8. ☐ Assignment Papers *(cover sheet & documents)*

9. ☐ 37 CFR 3.73(b) Statement *(when there is an assignee)*

10. ☐ English Translation Document *(if applicable)*

11. ☐ Information Disclosure Statement/PTO-1449 ☐ Copies of IDS Citations

12. ☐ Preliminary Amendment

13. ☒ Acknowledgment postcard

14. ☒ Certificate of Mailing

☐ First Class ☒ Express Mail *(Specify Label No.):* EJ914200908US

UTILITY PATENT APPLICATION TRANSMITTAL (Small Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No.
AAC-100US

Total Pages in this Submission

Accompanying Application Parts (Continued)

15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)

16. ☒ Small Entity Statement(s) - Specify Number of Statements Submitted: 1

17. ☐ Additional Enclosures (please identify below):

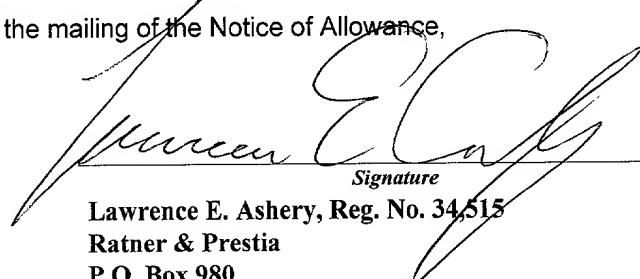
Fee Calculation and Transmittal

CLAIMS AS FILED

For	#Filed	#Allowed	#Extra	Rate	Fee
Total Claims	22	- 20 =	2	x \$9.00	\$18.00
Indep. Claims	6	- 3 =	3	x \$39.00	\$117.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
BASIC FEE					\$345.00
OTHER FEE (specify purpose)					\$0.00
TOTAL FILING FEE					\$480.00

- ☒ A check in the amount of **\$480.00** to cover the filing fee is enclosed.
- ☒ The Commissioner is hereby authorized to charge and credit Deposit Account No. **18-0350** as described below. A duplicate copy of this sheet is enclosed.
- ☐ Charge the amount of _____ as filing fee.
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- ☒ Charge any additional filing fees required under 37 C.F.R. 1.16 and 1.17.
- ☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

Dated: June 1, 2000


Signature
Lawrence E. Ashery, Reg. No. 34,515
Ratner & Prestia
P.O. Box 980
Valley Forge, PA 19482
(610) 407-0700

CC:

Attorney's Docket Number: AAC-100US




EXPRESS MAIL

CERTIFICATE OF MAILING - SEPARATE PAPER

In the Application of: Joseph H. Holland et al.
Serial Number: To Be Assigned
Filed: Herewith

I hereby certify that a **NEW UTILITY PATENT APPLICATION TRANSMITTAL (with its enclosures as listed below)** are being deposited with the United States Postal Service "EXPRESS MAIL POST OFFICE TO ADDRESSEE" service under 37 CFR 1.10 on the date indicated below with sufficient postage and is addressed to the Assistant Commissioner for Patents, Washington, DC 20231, Box Patent Application on:

Date: June 1, 2000


Kathleen Libby

Express Mail Label Number: EJ914200908US

New Utility Patent Application Transmittal (3 pages in duplicate)
Specification and Claims (31 pages)
Unexecuted DEC/POA (2 pages)
(28) Sheets of Informal Drawings
Small Entity Statement (1 page)
(1) check

Applicant or Patentee: Holland et al.
Serial or Patent No.: To Be Assigned
Filed or Issued: _____
For: METHOD AND APPARATUS FOR MANAGING DATA IN A BUSINESS TO BUSINESS ENVIRONMENT

Attorney's Docket No.: AAC-100US

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.9(f) and 1.27(c) - SMALL BUSINESS CONCERN**

I hereby declare that I am

- ☐ the owner of the small business concern identified below:
☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN Atlas Commerce, Inc.

ADDRESS OF CONCERN 400 Chester Field Parkway, Malvern, PA 19355

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18. and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third-party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed, to and remain with the small business concern identified above with regard to the invention, entitled METHOD AND APPARATUS FOR MANAGING DATA IN A BUSINESS TO BUSINESS ENVIRONMENT by inventor(s) J. Holland and M. Byrd described in

- ☒ the specification filed herewith.
☐ application serial no. _____, filed _____
☐ patent no. _____, issued _____

If the rights held by the above identified small business concern are not exclusive, each individual, concern or organization having rights in the invention is listed below* and no rights to the invention are held by any person, other than the inventor, who could not qualify as a small business concern under 37 CFR 1.9(d) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

NAME _____

ADDRESS _____

☐ INDIVIDUAL

☐ SMALL BUSINESS CONCERN

☐ NONPROFIT ORGANIZATION

NAME _____

ADDRESS _____

☐ INDIVIDUAL

☐ SMALL BUSINESS CONCERN

☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small business entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING Roland Desilets, Jr.

TITLE OF PERSON OTHER THAN OWNER Secretary

ADDRESS OF PERSON SIGNING 400 Chester Field Parkway, Malvern, PA 19355

SIGNATURE

Rola D B. Desilets

DATE

5/31/00

**METHOD AND APPARATUS FOR MANAGING DATA IN A
BUSINESS TO BUSINESS ENVIRONMENT**

FIELD OF THE INVENTION

5 The present invention relates to business-to-business (B2B) exchanges and in particular to B2B exchanges which selectively overlap. Specifically, a method and apparatus are described for authorizing interaction within and across multiple B2B communities.

BACKGROUND OF THE INVENTION

10 As the 20th century has drawn to a close, the role of the Internet with regard to business transactions has reached unprecedented heights. Specifically, many businesses have found that they can operate more efficiently and with greater profitability by using the Internet to facilitate their operations. Thus, while previously many businesses would interact with each other using a variety of mediums, the Internet has now come to play an important role in allowing such businesses to communicate, grow and prosper.

15 An interesting structure which has been used to facilitate interaction between businesses on the Internet is known as a business-to-business (B2B) exchange. In a business-to-business exchange, a plurality of companies agree to conduct transaction with each other in a structured Internet environment. Companies that are members of a B2B exchange are thus able to request, offer, sell and buy products and services with each other. Such

transactions occur in a structured environment. In many ways, because of the pre-established structure, two companies are able to transact business with each other more efficiently over the B2B exchange than using other communication avenues outside of the B2B exchange.

5 One reason that B2B exchanges are so useful is because they create vertical markets in which companies can transact business. Thus, each B2B exchange will attempt to play a central role within the market to which it caters. As a B2B exchange grows, it may also reach into other market areas.

10 All sectors seem to be good candidates for B2B technology. Furthermore, B2B exchanges have helped to increase competition between buyers and sellers, thus leading to reduced prices, higher quality, sharing of information, and lowering of transaction cycles. While B2B exchanges have had phenomenal success, they also suffer from drawbacks. B2B exchanges, for example, may be rigid in the manner in which they are structured. Thus, it may
15 be difficult to add or subtract one or more members from the B2B exchange. Furthermore, it may be difficult to control the transactions between members of a B2B exchange to fine levels detail.

SUMMARY OF THE INVENTION

20 The present invention relates to a method and apparatus of controlling a commercial environment, the environment comprising a plurality of traders, each of the traders included in at least one of a plurality of members, wherein the plurality of members define a community. The method comprises the steps of, defining the community, defining which members are included in the community, defining which traders are included in which members, and allowing
25 at least one of the traders to authorize at least one of a) interaction between a first trader and a second trader, and b) interaction between a first member and a second member.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is an illustration in accordance with an exemplary embodiment of a community master data table of the present invention.

5 Figure 2 is an illustration in accordance with an exemplary embodiment of a graphical user interface used to build the community master data table of the present invention.

Figure 3 is an illustration in accordance with an exemplary embodiment of a member master data table of the present invention.

10 Figure 4 is an illustration in accordance with an exemplary embodiment of a graphical user interface used to build the community master data table of the present invention.

Figure 5 is an illustration in accordance with an exemplary embodiment of a trader master data table of the present invention.

15 Figure 6 is an illustration in accordance with an exemplary embodiment of a graphical user interface used to build the trader master data table of the present invention.

Figure 7 is an illustration in accordance with an exemplary embodiment of an item master data table of the present invention.

20 Figure 8 is an illustration in accordance with an exemplary embodiment of an graphical user interface used to build the trader master data table of the present invention.

Figure 9 is an illustration in accordance with an exemplary embodiment of a trader to community authorization data table of the present invention.

Figure 10 is an illustration in accordance with an exemplary embodiment of a graphical user interface used to build the trader to community authorization table of the present invention.

5 Figure 11 is an illustration of a trader to member authorization data table in accordance with an exemplary embodiment of the present invention.

Figure 12 is an illustration in accordance with an exemplary embodiment of a graphical user interface used to build the trader to member authorization table of the present invention.

10 Figure 13 is an illustration in accordance with an exemplary embodiment of a trader to trader authorization data table of the present invention.

Figure 14 is an illustration in accordance with an exemplary embodiment of a graphical user interface used to build the trader to trader authorization table of the present invention.

15 Figure 15 is an illustration in accordance with an exemplary embodiment of a matrix table of the present invention.

Figure 16 is an illustration in accordance with an exemplary embodiment of a graphical user interface to authorize a trader to a matrix of the present invention.

20 Figure 17 an illustration in accordance with an exemplary embodiment of a member to member authorization data table of the present invention.

25 Figure 18 is an illustration in accordance with an exemplary embodiment of a graphical user interface used to build the member to member authorization table of the present invention.

Figure 19 is a flow chart of an exemplary operation of a trader to trader view of the present invention.

Figure 20 is a flow chart of an exemplary operation of a trader to community view of the present invention.

5 Figure 21 is a flow chart of an exemplary operation of a trader to member view of the present invention.

Figure 22 is a flow chart of an exemplary operation of maintaining item lists of the present invention.

10 Figure 23 is an exemplary embodiment in accordance with a graphical user interface used to maintain lists in the present invention.

Figure 24 is an exemplary embodiment in accordance with a graphical user interface used to perform a search in the maintain item list graphical user interface of the present invention.

DETAILED DESCRIPTION OF THE DRAWINGS

15 The present invention allows a plurality of B2B exchanges to be dynamically created and modified. B2B exchanges may be thought of as being comprised of communities in which transactions occur. Each community may be defined in terms of its constituent members. Members transact business with each other through the specific acts of individual traders which act on behalf of
20 their respective members.

Before proceeding, the following definitions may be helpful in order to understand the exemplary embodiments of the present invention.

Member: A member is an organization such as a company or a group. Members transact business with each other if such

transaction is authorized. In an exemplary embodiment of the present invention, a plurality of attributes for each member are stored. Attributes may include, for example, address, form of payment, preferred shipping method, etc.

5 **Community:** A plurality of members which are able to transact business with each other form a community. Thus, for example, a community may be given an appropriate name. Members may be allowed to conduct business transaction with each other if they belong to a common community.

10 **Trader:** A trader is an individual who performs transactions on behalf of a member. Thus, a trader is an individual who plays a representative role with respect to a member for which that trader performs transactions. An example of a trader is a purchasing agent within a corporation. Another example of a trader individual
15 broker. Each trader is given specific authorization with regard to his/her ability to interact with other traders, members and communities.

To illustrate the above definitions, assume that a community is, for example, a buying cooperative. The members of the community are the
20 individual companies that buy and sell within the community. Traders are the individuals who place and satisfy orders on behalf of their respective members.

One more definition may be useful, namely, that of a sponsor. Each community has a sponsor. The sponsor is the organization that organizes, selectively maintains, and selectively controls the community. A sponsor of a
25 community is also a member of the community.

In an exemplary embodiment of the present invention, it is useful to create individual definitions for each community, each member and each trader. These definitions typically include the parameters which relate to each entity. Exemplary definitions may include name, address, phone number,

buying and/or selling parameters (such as credit limits), buying and/or selling groups, and the like. The parameters relating to these relationships are maintained in data tables. Exemplary embodiments of these data tables are further defined herein. Also, the relationships between the entities are desirably based on individual definitions. These parameters are also maintained in data tables, and comprise information such data as the names of the entities that the table is relating to each other as well as other data relating to maintenance of the table. Exemplary embodiments of the relationship tables are also further defined herein.

Thus, for operation of a B2B exchange in accordance with an exemplary embodiment of the present invention, it is desirable to define a community, the members which are included in the community, and the traders which correspond to their respective members. A trader is authorized to allow interaction between one trader and another trader. In addition, (or alternatively), a trader may authorize interaction between one member and another member. In this manner, interactions between traders, members, or both may be flexibly defined.

In a further exemplary embodiment of the present invention, it may be desirable to designate at least one community in which the two traders are allowed to interact. By providing the ability to make such a designation, a finer level of control is created with regard to the interaction between two traders. In other words, two traders may be prohibited from interacting with each other unless they have been explicitly designated as belonging to a designated community.

An exemplary embodiment of the present invention is shown by referring to the block diagrams of community 1010 and community 1050 which is shown in Figure 25A and Figure 25B, respectively. Community 1010 includes member 1012, member 1016, member 1014 and member 1018. Members 1012 and 1014 may be, for example, buyers. Members 1016 and 1018 may be, for example, sellers. Member 1012 may have transactions performed on its behalf through the actions of traders 1020, 1022 and 1024.

Member 1016 may have transactions performed on its behalf as a result of the actions of traders 1032, 1034 and 1036. Member 1014 may have transactions performed on its behalf through the actions of traders 1026, 1028 and 1030. Member 1018 may have actions performed on its behalf as a result of the actions of traders 1038, 1040 and 1042.

One member may be a part of more than one community. Thus, for example, in Figure 25A, member 1012 is a buyer. In Figure 25B, however, member 1012 is a seller. The relationship between other members is illustrated in Figure 25A and Figure 25B. Also note that a member can be both a buyer and a seller simultaneously within a community.

Figure 26 is an overview of the relationships inside a community. Community 2020 comprises members 2022, 2024 traders 2026, 2028, 2030, 2032, 34, 36. Members and traders in a community communicate with each other through environment 2038. Environment 2038 may be, for example, a computer server. Environment 2038 includes transaction portion 2040 and maintenance portion 2042. Within community 2020, traders and members interact through either the transaction portion 2042 or the maintenance portion 2042. That is, if trader 2026 wishes to maintain data for trader 2032, trader 2026 will interact with trader 2032 through the data maintenance portion of environment 2038. Likewise, if trader 2026 wishes to transact with trader 2032, trader 2026 will interact through the transaction portion 2040 of environment 2038. As shown in Figure 26, while trader 2026 may transact business with trader 2032, trader 2026 does not have an authorized line of interaction through maintenance portion 2042 to trader 2034 and therefore can not maintain data for trader 2034. In other words, should a trader or member wish to transact business with another trader or a member, they desirably interact through transaction portion 2040, and have specific authorization to do so. Likewise, should any trader or member wish to maintain data for any other trader or member, they desirably interact through the maintenance portion 2042 of the environment 2038. By requiring a trader or member within a community to have authority to use either the transaction portion 2040 or maintenance portion

2042 in order to transact with another member or trader, data maintenance and
2020 transactions within community 2020 may be controlled.

Figure 27 represents another overview of an exemplary
embodiment of the present invention. As shown in Figure 27, a plurality of
graphical user interfaces (GUIs) may be used. Each GUI provides a unique
screen configuration. The screen configurations are used, for example, to show
the attributes, relationships or respective authorizations of communities,
members or traders. A unique GUI allows a trader to view information which a
trader considers pertinent to his/her respective member. Of course, by
customizing the GUI, individualized company logos and cosmetics may be
implemented.

While GUIs 3032, 3034 and 3036 allow the selective display of
data which is stored within database 3040, the GUIs interact with database 3040
via intermediate unit 3038. Thus, information from database 3040 is provided to
GUIs 3032, 3034 and 3036 using a common format. Each GUI then selects or
rearranges the data as desired for its respective trader.

Now that these terms used in describing an exemplary embodiment
of the present invention have been defined, and an overview of this exemplary
embodiment has been presented, it is useful to define some of the data used in
the present invention, and how that data is structured. Generally, the data is
structured into tables. The following are definitions of some of the tables used
in this exemplary embodiment.

In an exemplary embodiment of the present invention, it is useful
to define the community in a data trader. Turning now to Figure 1, there is
shown an exemplary embodiment of the community master table 10. This table
contains a default definition of the community. As the system may function for
multiple communities, multiple communities may be defined in single system.

Table 10 comprises three columns, the data field name 12, data
field type 14, and date of description 16. The community ID field 18 contains a

unique ID number for this community. This is the ID used by the system when ever the community is referenced. The community name field 20 contains an alpha numeric representation for the community ID. This community name may be used to reference the community to users, so that users need not remember specific community ID's. The sponsor ID field 22 contains a unique ID number for the sponsor of this community. Similar to community name, sponsor name 24 contains an alphanumeric representation of the sponsor that may be used by a user so that the user does not need to remember sponsor ID numbers. The language field 26 contains the default language that is used in this community. The system is not limited to English, but may be implemented in variety of languages. The currency base field 28 contains the base currency used in the community. As this system may be used for various languages, the system is not limited to U.S. dollars as well. The table and administration field 30 represents a plurality of fields used to administer the table. Examples of these fields are a created-by field and a last modified date field.

In order to create the previously defined data table in an exemplary embodiment of the present invention, it is useful to provide an interface for a user to enter data. Turning now to Figure 2, there is shown an exemplary embodiment of a graphical user interface 40 which a trader may use to build the community table illustrated in Figure 1. The community field 42 contains the ID of the community which is being established. This may be entered by the user of the system or may automatically entered should the user be authorized to build only one community. The community name 44 is the name associated with the community ID 42. The community sponsor 46 contains the ID of the sponsor of the community. The pick button 48 located next to the sponsor field 46 may be pressed to show a list of all sponsors which the user of the system is authorized to choose from. The sponsor name 50 is the sponsor name associated with the sponsor ID 46. The language field 52 shows the language in which this community operates. Next to the language field is a button 54 that, when pressed, will show all the possible traces for the language in this community in a drop down menu. The status field 56 will show active or inactive status. The down-arrow button 58 next to the status field 56 may be pressed to show a drop down menu with all the possible choices for the status field. The base currency

field 60 shows the base currency is which the community operates. The down-arrow button 64 next to the base currency field 62 may be pressed to activate a drop down menu that contains all the possible choices for currency selection in this community.

5 Similar to the community master illustrated in Figure 1, each member may be defined by parameters listed in a data table. Turning now to Figure 3, there is shown an exemplary embodiment of the master member table 70. The table contains three columns, data field name 72, data field type 74 and description 76. The member ID field 78 contains the unique ID number for this member. The member name field 80 contains the alphanumeric representation for the member ID. A user need not remember the member ID but can use the member name to reference this particular member. The address field 82 contains the address or addresses for this member. The communication numbers field 84 represents a plurality of fields containing phone numbers, fax numbers, e-mail address etc. The member class field 86 contains a default value for the member. This field is used in certain transactions between this member and other members. The member price group field 88 contains a representation of the price group in which this member resides. This field is used to place the member in a price group for sales and/or purchases of products within the system. The credit limit field 90 is used to hold a number which represents this members credit limit. The order limit field 92 is used to hold a number which represents the limit of the number of orders this member may place. The language field 94 contains the default language this member operates in. The base currency field 96 contains the default value for the base currency used by this member. The sold, billed and ship to flag field 98 represents a plurality of fields which are used to indicate if this member is a selling member a billing member, or a ship to member. The sold, billed, shipped to address field 100 represents a plurality of fields used in connection with the flag fields 98 and contains the proper, corresponding address. The broker field 102 contains name of a broker this member may use if elected. The bank field 104 contains the name of this members default bank. The payment terms field 106 contains the default standard payment terms should this member be a buyer. The freight terms field 108 contains the default standard freight terms used by this member

should this member be a buyer. The data management fields 110 represents a plurality of fields used to contain data regarding management of the table.

Similar to the exemplary embodiment graphical user interface illustrated in Figure 2, it is preferable to provide a user with an easy method to enter data into the system. This can be implemented using the graphical user interface shown in Figure 4. Figure 4 is an exemplary embodiment of a graphical user interface which a trader may see when establishing the member data illustrated in Figure 3. The member ID field 122 holds the unique member ID for this particular member. If the trader is authorized for only one member, the trader ID will automatically be entered in this box. If the trader is authorized to maintain more than one member, the trader must enter member ID number in this box. The member name field 124 contains the name of the member which is referenced by the member ID 122. The address box 126 contained the default address of the member referenced in the member name box 124 and member ID 122. The member reference box 128 and member reference name box 130 contains a reference member ID number and name respectively. The seller trader box 134 contains a name of a default trader contained in this member, should this member be a seller member. The pick button 136 is used so that the trader may view a list of seller traders which can be entered in the seller or trader box 134. The buyer trader box 138 is used to fill in a default trader name should this member be a buyer member. The pick button 140 may be used by the trader to see a list of all traders available to be used in this box. This field is required as each member requires at least one trader to become established within the community. There may be more than one trader within each member, however this is tables defines a default trader for this member.

In an exemplary embodiment of the present invention, it is useful to define a trader by establishing certain parameters within a data table. Figure 5, is an exemplary embodiment of the master trader table 160. The table comprises 3 columns, data field name 162, data field type 164, and description 166. The trader ID field 168 contains a unique ID number for the particular trader to which this table pertains. The trader name field 170 contains an alpha numeric representation of the trader ID so that users may refer to a name rather

than an unique ID number when referring to this trader. The trader address fields 172 contain a default address for the trader to which this sample pertains. The communication numbers field 174 represents a series of fields which contain various phone numbers, fax numbers, e-mail addresses etc. for this particular trader. The credit limit field 176 contains a number which represents a high credit limit for this particular trader. The order limit field 178 contains a number which represents the maximum amount of orders this trader may place should this trader be a buyer. The payment field 180 contains the standard payment terms for this trader should this trader be a buyer. The community field 182 contains a default community name for this trader. Please note that a trader may belong to multiple communities. The member ID field 184 contains a default member ID of the member to which this trader belongs. Please note that a trader may belong to multiple members as well. The buy, sale consumer user flag field 186 contains a flag in the proper field should this trader be a buyer, a seller, a consumer or simply a system user. The password field 188 contains a password that this trader must use to sign in on the system. The data administration field 190 contains a plurality of fields that are used for typical data administration.

In order to allow a user to enter data into the master trader table in an exemplary embodiment of the present invention, a graphical user interface is provided therein which a user can enter data. Figure 6 is an exemplary embodiment of a graphical user interface 200 used by a trader to maintain other trader data. The trader ID field 202 is used to show the ID of the trader that is being maintained. The trader name 204 holds the name of the trader referred to by the trader ID. The first, middle, last name fields 206 hold the first, middle and last name of the trader being maintained. The nickname field 208 contains the nickname of the trader being maintained. The address field 210 contain the default address for the trader being maintained. The password field 212 contains a password used by the trader being maintained in order to access the system. The trader reference field 214 contains the name of reference traders. The pick button 216 next to the trader reference field 214 is used to display a listing of traders which can be entered into the trader reference field 214. Moving now across the top of the screen, the address button 218, which is pressed in this

exemplary embodiment, is used to display the fields pertaining to the trader's addresses. The communication button 220 would be pressed to display the fields pertaining to the communication data as described in Figure 5. The member default button 222 would be pressed to display the default identification data for this particular trader, which comes from the member to which this trader belongs. The order default button 224 is used to display the fields which contain information regarding this trader's ordering preferences. The payment button 226 is used to display fields regarding how this trader pays, payment, terms, shipment terms, etc. The miscellaneous button 228 is pressed to display fields which are not displayed by the remaining buttons. The history button 230 is pressed to display the history of this particular trader.

In an exemplary embodiment of the present invention, it is useful to maintain a master item in a data table format. Figure 7 is an exemplary embodiment of the item master 240. The table contains three columns, the data field name 242, the data field type 244, and the description 246. The item field 248 contains a unique ID number for the particular item to which this master list pertains. The item description field 250 contains a text description of the item. The category level field 252 contains a number which represents the category level of this item. The manufacturer item 254 contains the manufacturers part number for this item. The supplier item field 256 contains the supplier part number for this item. Please note that the item number 248 the manufacturer's item number 254 and the suppliers item number 256 need not be the same number. The item price group field 258 contains the price group to which this item belongs. The catalog reference field 260 contains a page number for the catalog in which this item may appear. This field may also contain a web address which contains a description of the item. The supplier member ID field 262 contains the unique member ID to which this item is associated.

Similar to the other data tables, it is useful to provide a graphical user to enter data into a master item list. Turning now to Figure 8 there is shown an exemplary graphical user interface which a trader may use to maintain data in the master item list 280. The item field 282 holds the unique ID number for the item to which this table pertains. The member ID field holds the unique

member ID with which this item is associated. The pick button 286, located next to the member ID field is used to display a list of member ID's with which this item may be associated. The member name 288 holds the member name associated with the unique member ID in field 284. The item description 290 is a text description of the item to which this table pertains. The unit of measure field 292 is used to hold the unit of measure for this particular item. The down-arrow button 294 may be used by the trader to generate a drop down menu of all possible choices for unit of measure. The role field 296 holds the role that this item has been assigned. The down-arrow button 298 can be used by the trader to generate a drop down menu with all the possible role selections for this item. The manufacturer item field 300 holds the manufactures part number for this item. The manufacturer member ID field 302 holds the member ID of the manufacturer, should the manufacturer be a member in this community. The pick button 304 located next to the manufacturer member ID field 302 is used by the trader to view a list of all possible choices of member ID's. The manufacturer member name field 306 contains the name of the manufacturer should this manufacturer be a member as referenced in the member ID field 302. The supplier item field 308 holds the suppliers part number for this particular item, which may be different than the manufactures part number and different then the item number 282. The supplier member ID field holds the member ID of the supplier of this particular item. The pick button 312 located next to the supplier member ID field is used by the trader to display a list of all potential member ID's which a trader may pick for this particular item. The supplier member name field 314 holds the name of the supplier of this particular item. The unit list original field 316 holds the original list price for this particular item. A row of buttons is located across the top of this graphical unit interface. The descriptive button 318 is pressed in this exemplary embodiment and displays the fields related to an item description. The categorization button 320 would be pressed to show fields related to the categorization of the item to which this fields pertains. The order default button 332 would be pressed to display all the fields associated with order defaults. The miscellaneous button 324 would be pressed to display the fields not associated with fields 318, 320 or 322. The history button 326 would be pressed to show the fields associated with the item history.

We have now described exemplary embodiments of data tables which contain data that defines the entities which comprise a community, that is, the members, and the traders who belong to said members. We have also described an exemplary embodiment of a data table that defines a list of items which the members may sell to and purchase from each other, respectively.

Limits are placed on the traders and members in regard to which traders can maintain data for other traders, members, and communities. Also, restrictions are placed on members as to which other members they may transact business with. The following tables are used to define the relationships between traders, members and communities, and to restrict or allow a trader's access to certain data.

A single data table can be useful maintaining the parameters of a trader to community relationship. Turning now to Figure 9, there is shown an exemplary embodiment of the trader to community authorization table 330. The table comprises three columns, the data field name column 332, the data field type column 334, and the description column 336. The trader ID field 338 contains the unique ID of the trader to which this table pertains. The community field 340, contains the ID of the community in which this trader is authorized to maintain data. The all trader field 342 is set to positive if the trader to which this table pertains has the authority to maintain data of all traders within the community. The all members field 344 is set to positive if the trader to which this table pertains has the authority to maintain data for all members in this community. The all items field 346 is a positive if the trader to which this table pertains is authorized to view all of the items belonging to the members that this trader is authorized to in this community.

Should a user desire to maintain data, that is add, delete or modify the data in an exemplary authorization table, it is useful to provide the user a graphical user interface. Figure 10 is a representation of an exemplary embodiment of a graphical user interface which a trader may use to establish trader to community authorizations 360. The trader ID field 362 contains the unique ID of the trader to which this table pertains. The pick button 364 may be

pressed by the user to display a list of trader ID's that may be used in the trader ID field 362. This list represents all the trader ID's to which the trader maintaining this data has access. The trader name field 366 contains the full name of the trader to which this table pertains. The community field 368
5 contains the name of the community to which this trader is being authorized. The down-arrow button 370 may be pushed by the trader who is maintaining this data, to see a drop down menu containing the names of all the communities which may be entered into the community ID field 366. The next three boxes 372, 374 and 376 are used to authorize the trader to maintain data for all
10 members, all traders, and/or all items, respectively. These authorizations are within a particular community. The balance of the text boxes 378 and 382 are used to display status and conditions of the data table.

In an exemplary embodiment of the present invention, parameters that define the trader to member relationship may be kept in a data table.
15 Turning now to Figure 11, there is shown an exemplary embodiment of the trader member authorization table 400. The table consist of three columns: data field name 402, data field type 404 and description 406. The community field 408 contains the name of the community in which this trader is authorized to participate. The trader ID field 410 is the ID number of the trader to which this table pertains. The member ID field 412 contains the unique identification
20 number for the member which this trader is authorized to maintain data for. Effective date fields 414 and 416 represent the date at which this table becomes effective and the date at which this table becomes effective. Hold code field 416 contain a code representing a reason for this authorization to be on hold should
25 this authorization indeed be on hold. The status field 418 contains an active/inactive status which describes the status of this authorization.

As with the other data tables desirable herein, it is useful to provide a user with a graphical user interface to access data. Figure 12 represents an exemplary embodiment of a graphical user interface used by a
30 trader to establish trader to trader authorizations. Community field 432 contains the name of the community in which this authorization is valid. The down arrow button 434 next to community field 432 may be pressed by the trader to activate

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a drop down window which contains the name or names of the communities in which this trader may establish trader to trader authorizations. The from trader field 436 contains the name of the trader for which that the user is establishing authorization. Pick button 438 next to the from trader field 436 may be pressed by the user to display a list of traders from which the user can pick. The from trader name field 440 represents the name associated with the trader ID in the from trader field 436. The to trader field 442 represents the unique ID for the trader which the user is establishing as the trader who's data will be maintained by the from trader. Pick button 444 may be pressed by the user to show a list of all traders possible for the to trader field 442. The user may pick a name off of the list to be entered into the to trader field 442. The to trader name field 446 is the text representation of the to trader ID in the to trader ID field 442. The effective in date 448 and the effective out date 450 represent the date this information becomes effective and the date this information becomes invalid, respectively. The hold code field 452 represents a code which represents a reason for this authorization to be on hold, should it be so. The down arrow button 454 next to the hold code field 452 may be pressed by the user to activate a drop down window from which the user may pick the proper hold code, should one be necessary. The status field 456 holds the status of this authorization, i.e. active, non-active, hold, etc. The down arrow button 458 may be pressed by the user to activate a drop down window which provides a list of all potential status code from which the user may pick the appropriate one.

In an exemplary embodiment of the present invention, trader to trader relationship may be defined by parameters as data table. Figure 13 represents an exemplary embodiment of a trader to trader authorization table 470. The table comprises three column, the data field name 472, the data field type 474 and description 476. The community field 478 holds the name of the community in which these traders are authorized to participate. The from trader field 480 represents the trader that is being authorized to maintain data for another trader. The to trader field 482 represents the trader that the from trader is being authorized to maintain. The effective date fields 484 contain dates at which this authorization table becomes effective and becomes ineffective, respectively. The hold codes field 486 contains codes which represents reasons

for which a trader authorization may be on hold. The status field 484 contains the current status of this trader to trader authorization.

In order to allow a user access to the data, a graphical user interface is helpful. Figure 14 is an exemplary embodiment of a graphical user interface which a user may use to authorize traders to maintain member data 500. Community field 502 contains the name of the community in which this trader to member authorization is valid. The down arrow button 504 located next to the community field 502 is used to activate a drop down menu which will show all the possible choices for communities for this particular trader. Trader ID field 506 contains the unique ID of the trader that is being authorized to maintain data for the particular member. The pick button 508 located next to the trader ID field 506 is used to display a list of trader ID's which may be entered into trader ID field 506. Member ID field 510 contains a unique member ID number. This member is the member which this trader is being authorized to maintain data for. The pick button 512 located next to the member ID field 510 is used by the user to display a list of all member ID's which may be chosen to fill in member ID field 510. The member name field 514 is the name of the member corresponding to the member ID in number ID field 510. The effective in and effective out dates 516, 518 are the dates which this information becomes effective and non-effective respectively. Hold code field 520 contains a code which represents a reason why this authorization should be on hold if necessary. The down arrow button 522 next to the hold code field 520 is used to activate a drop down window from which the appropriate hold code may be chosen. The status field 524 contains a status of this authorization. The down arrow button 526 located next to the status field 524 is used to activate a drop down window from which the appropriate status code may be chosen.

It is appropriate at this time to define a matrix. A matrix is a table of tables. If a certain list of tables is used on a repetitive basis within the system, for various reasons, a matrix may be created and used as a single entity. Figure 15 is an exemplary embodiment of a matrix table. In member master table 70 there is a ship via field. The ship via field may point to ship via matrix table 540. Within ship via matrix table 540 there are multiple data fields 542.

Each of these data fields 542 contains a particular method of shipping, i.e. Federal Express, U.P.S. Red, etc. In this manner, anytime a table requires a ship via field, the matrix table may be inserted rather than repeating each of the specific fields 542 each time this table is required.

5 As discussed in reference to other data tables, for a user to add, delete or modify data, it is useful to provide a graphic user interface. Figure 16 is an exemplary embodiment of a graphical user interface which a trader may use to authorize a particular trader to maintain matrix data 560. The community field 562 holds the name of the community in which this trader is authorized to
10 maintain matrix data. In this example the community is Atlas Demo. The down arrow button 564 located next to the community field 562 is used by the trader to activate a drop down window which will show all the potential communities which this trader may pick from these communities in which this trader is authorized to maintain matrix data. The trader ID field 564 contains the unique
15 ID of the trader which is being authorized to maintain matrix data. The pick button 566 located next to the trader ID field 564 may be pressed by the user to display a list of traders ID's which may be placed in trader ID field 564. The trader name field 568 contains the name of the trader associated with the unique trader ID in the trader ID field 564. The matrix type 570 is the type of matrix
20 which the trader is authorized to maintain. The pick button 572 located next to the trader matrix type field 570 may be pressed by the user to display a list of matrix types from which the user may choose. The matrix ID field 574 contains the unique ID of the matrix which this trader is being authorized to maintain data within. The effective date fields 576 and 578 contain date which show when this
25 authorization is effective and when it stops being effective respectively. The hold code field 580 and the status field 582 operates similar to other hold code fields and status fields within previously described graphical user interfaces.

Turning now to Figure 17 there is showing an exemplary
embodiment of a member to member authorization table 580. This table
30 contains three columns, data field name 582, data field type 584, and description 586. The transaction type field 588 contains the type of transaction in which this authorization is valid. Please note that the member to member authorization is a

transaction based authorization, whereas all other authorizations are data maintenance based authorizations. This member to member authorization permits certain types of transactions between members within a community. The from member field 590 contains the name of the member that is being authorized to perform the transaction. The to member field 592 contains the name the member that the to member is authorized to transact business with. The community field 594 contains the name the community in which this member to member authorization is valid.

Figure 18 is an exemplary embodiment of a graphical user interface 620 which a system user may use to authorize members to members. The community field 622 contains the name of the community in which this authorization is valid. The down arrow button 624 located next to the community field 622 may be pressed by the user to activate a drop down window which contains the names of all the communities which may be chosen for this field. The transaction type field 626 contains the type of transaction which is being authorized between two members. The down arrow button 628 located next to the transaction type 626 may be pressed by the user to activate a drop down window which show a list of all choice available for this user to pick from. The transaction subtype field 628 contains the type of the transaction type which is being authorized in this member to member authorization. The down arrow button 630 located next to the transaction subtype field 628 may be pressed by the user to activate a drop down window which contains all of the users choices for this field entry. The from member field 632 contains a unique ID number of the member which is being authorized to transact business in this community, in this screen. The pick button 634 located next to the from member field 632 may be chosen by the user to display a list of all member ID's from which the user may choose. The from member name 636 is the textural representation of the from member ID. The to member field 638 contains the unique ID number for the member which this user is authorizing another member to transact business with the pick button 640 located to next to the to member field 638 may be chosen by the user to display a list of all potential member ID's which may be used to fill in this box. The to member name 642 contains the text representation of the to member ID in the to member field 638. The remaining

fields hold code 644 effective date 646 and 648 and this field 650 all function similar to other graphical user interfaces described herein.

Now that the data tables have been described and the authorization tables have been described, it is now appropriate to describe how these tables interact so that a user of the system may restrict viewing or maintaining data that they are specifically authorized to view or maintain. In other words, a user of the system who, in this exemplary embodiment is a trader, may be authorized to maintain data for other traders, other members, or the community. This trader may be authorized to maintain all data, or just a portion of the data. Whether or not a trader has authority to maintain data for another trader, another member, or the community is determined as the trader uses the system. It is determined by comparing the authorization tables with the master tables at the time the user, or trader, is using the system.

This determination is accomplished by establishing a virtual table called a view. The view is a subroutine which is called into use each time a trader, or a user of the system, wants to maintain data for another trader, another member, or the community.

Figure 19 is a flow chart of an operation of a view. This exemplary view determines the relationship between traders. At step 650, the trader ID is input into the system. This is the trader ID of the current user. At step 652 the trader to trader authorization table is searched for the specific trader ID. If the trader to trader authorization table shows that the trader ID of the user is authorized to maintain trader ID's of other traders, a list of the trader ID's which this trader is authorized to maintain is displayed on the system. At step 656, the trader that is currently using the system, and maintaining data, views only the data associated with the trader ID's that this particular trader is authorized to maintain.

Figure 20 is a flow diagram of an exemplary embodiment of the trader to community authorization view of the present invention. The view will determine the relationship between a trader and a community. The trader ID of

the user of the system is input in step 700. In step 702, the trader to community authorization tables are searched for the particular trader ID that has been input into the system. At step 704, the system returns data for the communities for which this trader has been authorized to maintain data. In step 706, the trader views only the data associated with the communities which this trader is authorized to main data for.

Figure 21 is a flow diagram of an exemplary embodiment of the trader to member authorization view of the present invention. This view will determine the relationship between a trader and a member. First, at step 750, the trader ID is input into the system. At step 752, the trader to member authorization tables are searched for the specific trader ID. At step 754, data is returned to the trader associated with the from the members which this trader is authorized to maintain. And at 756 the trader views the data related to the members that this trader is authorized to maintain. Please note this data is only those members which this trader is authorized to maintain.

In an exemplary embodiment of the present invention, it is useful to provide the ability to do add, delete or modify data. This is referred to as data maintenance and may be implemented, for example, in accordance with the flow chart of figure 22. Figure 22 is a flow diagram representing an exemplary embodiment of the steps required to do a data maintenance. In particular, Figure 22 represents steps required for maintaining item lists. In step 802, the trader ID of the user who is going to maintain an item list is input into the system. At step 804, the item list details are retrieved from the master item list table. At step 806, a view is created that compares the master item list details with the trader to community authorization table and the trader to member authorization table. The trader to community authorization table and the trader to member authorization table are compared using the trader ID, input in step 802, to retrieve the communities and members which this trader is authorized to maintain. Those traders and members are then compared to the master item list so that the master item list details 808 only pertaining to the authorized communities and authorized members are returned to the user/trader so that at

step 814 the user/trader will view a list of item lists that he or she is authorized to maintain.

Maintaining data is typically required of any system using data tables. In order to add, delete or modify a data table, for example, an item list table, it is useful to provide a graphical user interface for a user, which may be implemented, for example, in accordance with Figure 23. Figure 23 is an exemplary embodiment of a graphical user interface that a user will use and see when maintaining an item list 850. The user will input a name of a community in field 852. The user may press the pick button 854 located next to the community field 852 which will display a list of communities which the trader is authorized to maintain. The member ID of the member which this trader is going to maintain is input in field 856. In field 858, the text name relating to the member ID in field 856 is displayed. The list type 860 is the type of the list which this trader wishes to maintain. The list ID 862 is the ID of the list which this trader is going to maintain. The item member ID 864 is the ID of the member to which the item belongs. The pick button 866 located next to the item member ID field 864 may be pressed by the user to pick from a list of item member ID that are available for user to pick from. The item member name is the text name associated with the item member ID. The item 870 is the actual item number which the trader is maintaining on the item list. The item description is the text description relating to that particular item number. The unit of measure 874 is the unit of measure in which this item is sold or purchased. The quantity 876 is the quantity which is being entered into this item list.

Figure 24 is an example of a GUI of a search performed on the maintain item list. The search results show this particular trader's authorized community 900, member ID 902, list type 904, list ID 906, items 908 and a sequence 910. This table is formed by the method illustrated in Figure 22.

What is Claimed:

1 1. A computer implemented method for controlling a
2 commercial environment, said environment comprising a plurality of traders,
3 each of said traders included in at least one of a plurality of members, wherein
4 said plurality of members are included in at least one of a plurality of
5 communities, said method comprising the steps of:

6 defining which of said plurality of members are included in at least
7 one of said communities;

8 defining which of said plurality of traders are included in which of
9 said plurality of members, and

10 allowing at least one of said traders to authorize at least one of:

11 a) interaction between a first of said traders and a
12 second of said traders, and

13 b) interaction between a first of said members and a
14 second of said members.

1 2. The method of claim 1, further comprising:

2 designating at least one of said communities in which said first and
3 second of said traders are allowed to interact, wherein interaction between said
4 first and second of said traders is prohibited unless said first and second of said
5 traders belong to said designated community.

1 3. The method of claim 1, wherein ones of said members are
2 included in more than one of said communities.

1 4. The method of claim 2, further comprising the step of:

2 allowing said ones of said traders to authorize interaction between
3 any of said traders and ones of said members.

1 5. A method of controlling a commercial environment, said
2 environment comprising a plurality of traders, ones of said traders included in a
3 at least one of a plurality of members, wherein said plurality of members are
4 included in at least one of a plurality of communities, said method comprising
5 the steps of:

6 a) defining which of said members are included in at least one
7 of said communities;

8 b) defining which of said traders are included in at least one of
9 said communities;

10 c) defining which of at least one of said members is linked to at
11 least one of another of said members in said community;

12 d) defining which of at least one of said traders is linked to said
13 at least one of said communities; and

14 e) allowing ones of said traders and ones of said members to
15 interact within the at least one of the communities based on steps (a) through (d).

1 6. The method of claim 5, wherein ones of said members are
2 included in more than one of said communities.

1 7. The method of claim 5, further comprising the step of:

2 defining one of said traders which is linked to another of said
3 traders.

1 8. The method of claim 5, further comprising the step of:

2 defining which one of said traders which is linked to one of said
3 members.

1 9. A method of controlling a commercial environment, said
2 environment comprising a plurality of traders, each of said traders included in at
3 least one of a plurality of members, wherein said plurality of members defines a
4 community, said method comprising the steps of :

5 creating a database;

6 restricting access of at least one of said traders to a portion of said
7 database based on at least one of:

8 a) a first definition of a first relationship between said
9 trader to at least one of said members, and

10 b) a second definition of a second relationship between
11 said trader to at least one of another of said traders.

1 10. The method of claim 9, further comprising:

2 restricting access of at least one of said traders to a portion of said
3 database based on a definition of a third relationship between said trader to said
4 community.

1 11. The method of claim 9, wherein said plurality of members
2 defines a plurality of communities which includes said community.

1 12. An apparatus for controlling a commercial environment,
2 said environment comprising a plurality of traders, each of said traders included
3 in at least one of a plurality of members, wherein said plurality of members are
4 included in at least one of a plurality of communities, said apparatus comprising:

5 a members table for defining which of said plurality of members
6 are included in at least one of said communities;

7 a traders table for defining which of said plurality of traders are
8 included in which of said plurality of members, and

9 an authorization table for allowing at least one of said traders to
10 authorize at least one of:

11 a) interaction between a first of said traders and a
12 second of said traders, and

13 b) interaction between a first of said members and a
14 second of said members.

1 13. The apparatus of claim 12, wherein said authorization table is
2 further for designating at least one of said communities in which said first and
3 second of said traders are allowed to interact, wherein interaction between said
4 first and second of said traders is prohibited unless said first and second of said
5 traders belong to said designated community.

1 14. The apparatus of claim 12, wherein ones of said members
2 are included in more than one of said communities.

1 15. The apparatus of claim 13, wherein said authorization table is
2 further for allowing said ones of said traders to authorize interaction between any
3 of said traders and ones of said members.

1 16. A computer system for controlling a commercial
2 environment, said environment comprising a plurality of traders, ones of said
3 traders included in a at least one of a plurality of members, wherein said
4 plurality of members are included in at least one of a plurality of communities,
5 said system comprising:

6 a members table for defining which of said members are included
7 in at least one of said communities;

8 a traders table for defining which of said traders are included in at
9 least one of said communities;

10 a further members table for defining which of at least one of said
11 members is linked to at least one of another of said members in said community;
12 and

13 a further traders table for defining which of at least one of said
14 traders is linked to said at least one of said communities;

15 wherein ones of said traders and ones of said members interact
16 within the at least one of the communities based on definitions included in said
17 members table, said traders table, said further members table and said further
18 traders table.

1 17. The system of claim 16, wherein ones of said members are
2 included in more than one of said communities.

1 18. The system of claim 16, further comprising an additional
2 traders table for defining one of said traders which is linked to another of said
3 traders.

1 19. The system of claim 16, further comprising an additional
2 traders table for defining which one of said traders which is linked to one of said
3 members.

1 20. A computer system for controlling a commercial
2 environment, said environment comprising a plurality of traders, each of said
3 traders included in at least one of a plurality of members, wherein said plurality
4 of members defines a community, said system comprising:

5 a database which indicates restricting of access of at least one of
6 said traders to a portion of said database based on at least one of:

7 a) a first definition of a first relationship between said
8 trader to at least one of said members;

9 b) a second definition of a second relationship between
10 said trader to at least one of another of said traders;
11 and

12 a processing unit for restricting of access based on contents of said
13 database.

1 21. The system of claim 20, wherein access is restricted of at
2 least one of said traders to a portion of said database based on a definition of a
3 third relationship between said trader to said community.

1 22. The system of claim 20, wherein said plurality of members
2 defines a plurality of communities which includes said community.

ABSTRACT

10

Figure 1 displays 12 histograms arranged in a 6x2 grid, showing the distribution of the number of non-zero elements in the vector x for different values of n . The left column shows distributions for $n = 10, 20, 30, 40, 50, 60$, and the right column shows distributions for $n = 70, 80, 90, 100, 110, 120$. Each histogram has 'Number of non-zero elements' on the x-axis and 'Frequency' on the y-axis. The distributions are roughly bell-shaped and centered around $n/2$.

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Establish Community	
Community	Equisource 42
Community Name	Equisource 44
Sponsor	044D19383 46
Sponsor Name	Equisource 50
Language	English 52
Status	Active 56
Base Currency	USD 60

FIGURE 1-2

MASTER - MEMBER

	DATA FIELD NAME 72	DATA FIELD TYPE 74	DESCRIPTION 76
78	MEMBER - ID		
80	MEMBER - NAME		
82	ADDRESS		
84	COMMUNICATION NOS		
86	MBR - CLASS		
88	MBR - PRICE - GROUP		
90	CREDIT - LIMIT		
92	ORDER - LIMIT		
94	LANGUAGE		
96	BASE CURRENCY		
98	SOLD/BILL/SHIP FLAG		
100	SOLD/BILL/SHIP DASH		
102	BROKER		
104	BANK		
106	PAYMENT - TERMS		
108	FREIGHT - TERMS		
110	DATA - MGMT.		

FIGURE 3

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120

Enroll Member		Communication	Roles	Order Defaults	Mbr Defaults	Mbr Defaults 2	Misc	History
Member ID:	178923231	122						
Member Name:	Boise Cascade Office Products							
Address Line 1:	800 W Bryn Mawr Avenue							
Address Line 2:								
Address Line 3:								
City:	Itasca							
State / Province:	IL							
Postal Code:	60143-1503							
Country:	USA							
Member Reference:	128	Pick	130					
Member Ref Name:	132							
Seller Trader:	134	Pick	136					
Buyer Trader:	138	Pick	140					

Warning: Apple Window

Search OK Cancel Apply Help

FIGURE 4

MASTER-TRADER

FIGURE 5

Parameter	Value	Unit
Initial concentration	1.0	g/L
Initial pH	7.0	
Temperature	25	°C
Time	0, 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 16384, 32768, 65536, 131072, 262144, 524288, 1048576, 2097152, 4194304, 8388608, 16777216, 33554432, 67108864, 134217728, 268435456, 536870912, 1073741824, 2147483648, 4294967296, 8589934592, 17179869184, 34359738368, 68719476736, 137438953472, 274877906944, 549755813888, 1099511627776, 2199023255552, 4398046511104, 8796093022208, 17592186044416, 35184372088832, 70368744177664, 140737488355328, 281474976710656, 562949953421312, 1125899906842624, 2251799813685248, 4503599627370496, 9007199254740992, 18014398509481984, 36028797018963968, 72057594037927936, 144115188075855872, 288230376151711744, 576460752303423488, 1152921504606846976, 2305843009213693952, 4611686018427387904, 9223372036854775808, 18446744073709551616, 36893488147419103232, 73786976294838206464, 147573952589676412928, 295147905179352825856, 590295810358705651712, 1180591620717411303424, 2361183241434822606848, 4722366482869645213696, 9444732965739290427392, 18889465931478580854784, 37778931862957161709568, 75557863725914323419136, 151115727451828646838272, 302231454903657293676544, 604462909807314587353088, 1208925819614629174706176, 2417851639229258349412352, 4835703278458516698824704, 9671406556917033397649408, 19342813113834066795298816, 38685626227668133590597632, 77371252455336267181195264, 154742504910672534362390528, 309485009821345068724781056, 618970019642690137449562112, 1237940039285380274899124224, 2475880078570760549798248448, 4951760157141521099596496896, 9903520314283042199192993792, 19807040628566084398385987584, 39614081257132168796771975168, 79228162514264337593543950336, 158456325028528675187087900672, 316912650057057350374175801344, 633825300114114700748351602688, 1267650600228229401496703205376, 2535301200456458802993406410752, 5070602400912917605986812821504, 10141204801825835211973625643008, 20282409603651670423947251286016, 40564819207303340847894502572032, 81129638414606681695789005144064, 162259276829213363391578010288128, 324518553658426726783156020576256, 649037107316853453566312041152512, 1298074214633706907132624082305024, 2596148429267413814265248164610048, 5192296858534827628530496329220096, 10384593717069655257060992658440192, 20769187434139310514121985316880384, 41538374868278621028243970633760768, 83076749736557242056487941267521536, 166153499473114484112975882535043072, 332306998946228968225951765070086144, 664613997892457936451903530140172288, 1329227995784915872903807060280344576, 2658455991569831745807614120560689152, 5316911983139663491615228241121378304, 10633823966279326983230456482242756608, 21267647932558653966460912964485513216, 42535295865117307932921825928971026432, 85070591730234615865843651857942052864, 170141183460469231731687303715884105728, 340282366920938463463374607431768211456, 680564733841876926926749214863536422912, 1361129467683753853853498429727072845824, 2722258935367507707706996859454145691648, 5444517870735015415413993718908291383296, 10889035741470030830827987437816582766592, 21778071482940061661655974875633165533184, 43556142965880123323311949751266331066368, 87112285931760246646623899502532662132736, 174224571863520493293247799005065324265472, 348449143727040986586495598010130648530944, 696898287454081973172991196020261297061888, 1393796574908163946345982392040522594123776, 2787593149816327892691964784081045188247552, 5575186299632655785383929568162090376495104, 11150372599265311570767859136324180752990208, 22300745198530623141535718272648361505980416, 44601490397061246283071436545296723011960832, 89202980794122492566142873090593446023921664, 178405961588244985132285746181186892047843328, 356811923176489970264571492362373784095686656, 713623846352979940529142984724747568191373312, 1427247692705959881058285969449495136382746624, 2854495385411919762116571938898990272765493248, 5708990770823839524233143877797980545530986496, 11417981541647679048466287755595961091061972992, 2283596308329	

FLURE b.

280

00T090" 25058560

Main Item		Order Details		Misc		History	
Item:	318	322	322	322	282	326	326
Member ID:	178923231	284			286		
Member Name:	Boise Cascade Office Products						
Item Description:	TONER HP LASERJET 74						
Item Description 2:							
Remarks:							
Unit of Measure:	EA	254					
Role:	S	256	258				
Manufacturer Item:	92285A	300					
Manufacturer Member ID:	302	Pick	304				
Manufacturer Member Name:	HEWLETT PACKARD CO						
Supplier Item:	5192285A	308					
Supplier Member ID:	178923231	310	Pick	312			
Supplier Member Name:	Boise Cascade Office Products						
Unit List Orig:	107.0000000	316					314

Warning: Apple Window

Search OK Cancel Apply Help

Figure 8

360

00T090" 25058560

Authorize Trader To Community

Main

History

Trader ID:

schlosser.joe

362

Pick

364

Trader Name:

Joe Schlosser

366

Community:

AtlasDemo30

370

All Members

☐

372

All Traders

☐

374

All Items

☒

376

Hold Code:

378

380

Effective In Date:

20000417

382

Effective Out Date:

21000101

384

Status:

Active

386

Warning: Apple Window

Search

OK

Cancel

Apply

Help

Fig. 10

500

00T090" / 5058560

Authorize Traders to Member	
Main	History
Community: 501	Atlas Demo 504
Trader ID: 506	schlosser job 508
Member ID: 178923231	510
Member Name: Boise Cascade Office Products	514
Effective In Date: 20000418	516
Effective Out Date: 21000101	518
Held Code: 520	512
Status: Active	524

Figure 12

FIGURE 13

00T090" 25058560

430

Authorize Trader to Trader

Main

History

Community 432

AtlasDemo 414

From Trader 430

Atlas user 430

From Trader Name

Atlas System User 430

To Trader

schlosser joe 444

To Trader Name

Joe Schlosser 446

Effective In Date

20000417 44

Effective Out Date

21000101 450

Hold Code

452 454

Status

Active 456

OK

Cancel

Help

Warning: Apple Window

Figure 14

MEMBER-MASTER

<SHIP VIA>



MATRIX SHIP-VIA 540

542

FED Ex
UPS RED
UPS BLUE
UPS OR.
GR. FRT.
BST WAY

FIGURE 15

Parameter	1990-1991		1991-1992		1992-1993		1993-1994		1994-1995		1995-1996		1996-1997		1997-1998		1998-1999		1999-2000		2000-2001		2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011		2011-2012		2012-2013		2013-2014		2014-2015		2015-2016		2016-2017		2017-2018		2018-2019		2019-2020		2020-2021		2021-2022		2022-2023		2023-2024		2024-2025		2025-2026		2026-2027		2027-2028		2028-2029		2029-2030		2030-2031		2031-2032		2032-2033		2033-2034		2034-2035		2035-2036		2036-2037		2037-2038		2038-2039		2039-2040		2040-2041		2041-2042		2042-2043		2043-2044		2044-2045		2045-2046		2046-2047		2047-2048		2048-2049		2049-2050		2050-2051		2051-2052		2052-2053		2053-2054		2054-2055		2055-2056		2056-2057		2057-2058		2058-2059		2059-2060		2060-2061		2061-2062		2062-2063		2063-2064		2064-2065		2065-2066		2066-2067		2067-2068		2068-2069		2069-2070		2070-2071		2071-2072		2072-2073		2073-2074		2074-2075		2075-2076		2076-2077		2077-2078		2078-2079		2079-2080		2080-2081		2081-2082		2082-2083		2083-2084		2084-2085		2085-2086		2086-2087		2087-2088		2088-2089		2089-2090		2090-2091		2091-2092		2092-2093		2093-2094		2094-2095		2095-2096		2096-2097		2097-2098		2098-2099		2099-2100		2100-2101		2101-2102		2102-2103		2103-2104		2104-2105		2105-2106		2106-2107		2107-2108		2108-2109		2109-2110		2110-2111		2111-2112		2112-2113		2113-2114		2114-2115		2115-2116		2116-2117		2117-2118		2118-2119		2119-2120		2120-2121		2121-2122		2122-2123		2123-2124		2124-2125		2125-2126		2126-2127		2127-2128		2128-2129		2129-2130		2130-2131		2131-2132		2132-2133		2133-2134		2134-2135		2135-2136		2136-2137		2137-2138		2138-2139		2139-2140		2140-2141		2141-2142		2142-2143		2143-2144		2144-2145		2145-2146		2146-2147		2147-2148		2148-2149		2149-2150		2150-2151		2151-2152		2152-2153		2153-2154		2154-2155		2155-2156		2156-2157		2157-2158		2158-2159		2159-2160		2160-2161		2161-2162		2162-2163		2163-2164		2164-2165		2165-2166		2166-2167		2167-2168		2168-2169		2169-2170		2170-2171		2171-2172		2172-2173		2173-2174		2174-2175		2175-2176		2176-2177		2177-2178		2178-2179		2179-2180		2180-2181		2181-2182		2182-2183		2183-2184		2184-2185		2185-2186		2186-2187		2187-2188		2188-2189		2189-2190		2190-2191		2191-2192		2192-2193		2193-2194		2194-2195		2195-2196		2196-2197		2197-2198		2198-2199		2199-2200		2200-2201		2201-2202		2202-2203		2203-2204		2204-2205		2205-2206		2206-2207		2207-2208		2208-2209		2209-2210		2210-2211		2211-2212		2212-2213		2213-2214		2214-2215		2215-2216		2	
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095

Authorize Trader To Matrix

Main

History

Community: 602

Atlas: Demo

504

Trader ID: 504

schlosser.joe

506

Trader Name: 508

Joe Schlosser

Matrix Type: 500

CommW

502

Matrix ID: 501

category

Effective In Date: 20000503

576

Effective Out Date: 21000101

578

Hold Code: 580

Status: Active

582

Cancel

Apply

Help

Figure 16

001090" 25058560

620

Authorize Member To Member

Main	History
Community 622	AtlasCent
Transaction Type 620	Order
Transaction Subtype BEN	620
From Member 178923231	620
From Member Name Boise Cascade Office Products	620
To Member 043230304	620
To Member Name Atlas Commerce, INC - Headquarters	620
Hold Order	
Effective In Date 19991007	
Effective Out Date 20000101	
Status Active	620

FIGURE 18

VIEW AUTH TRADER TO TRADER

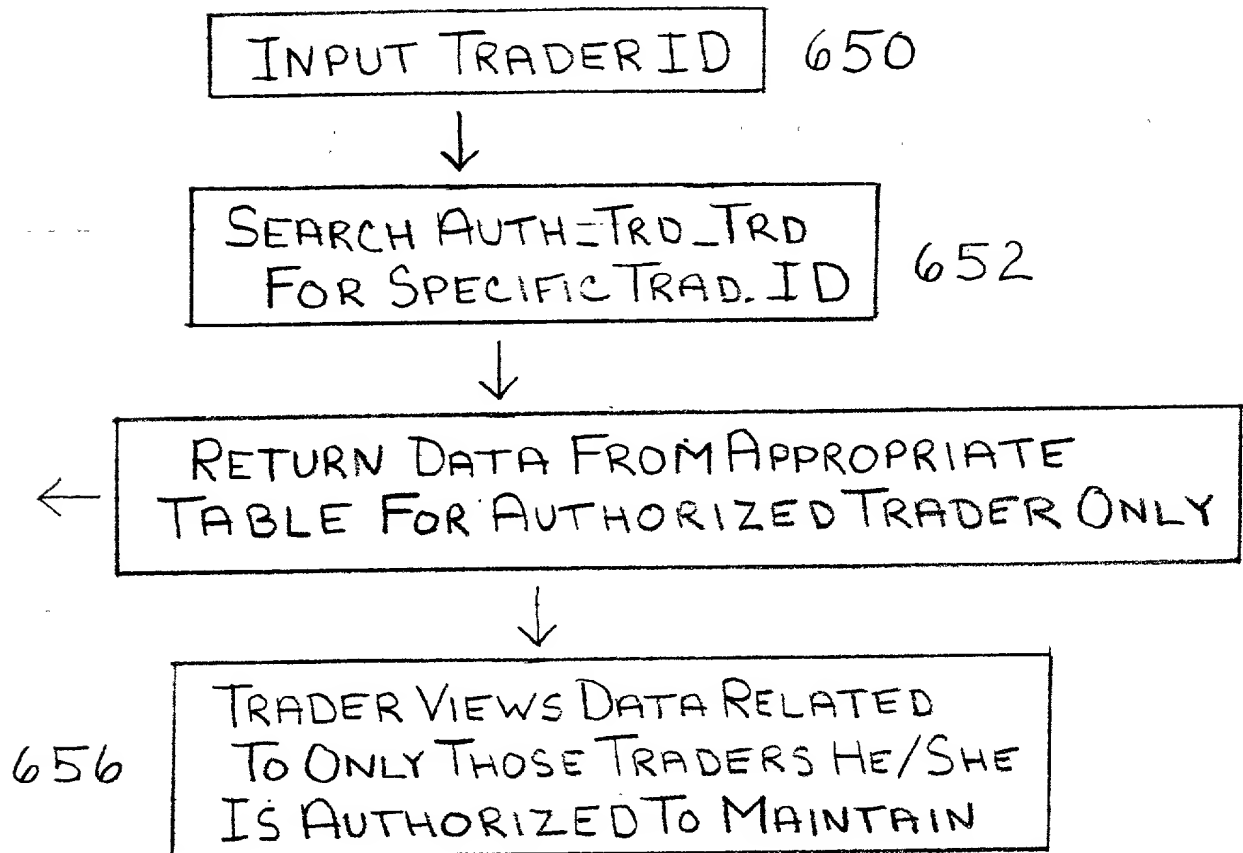


FIGURE 19

VIEW
AUTHORIZATION TRADER TO COMMUNITY

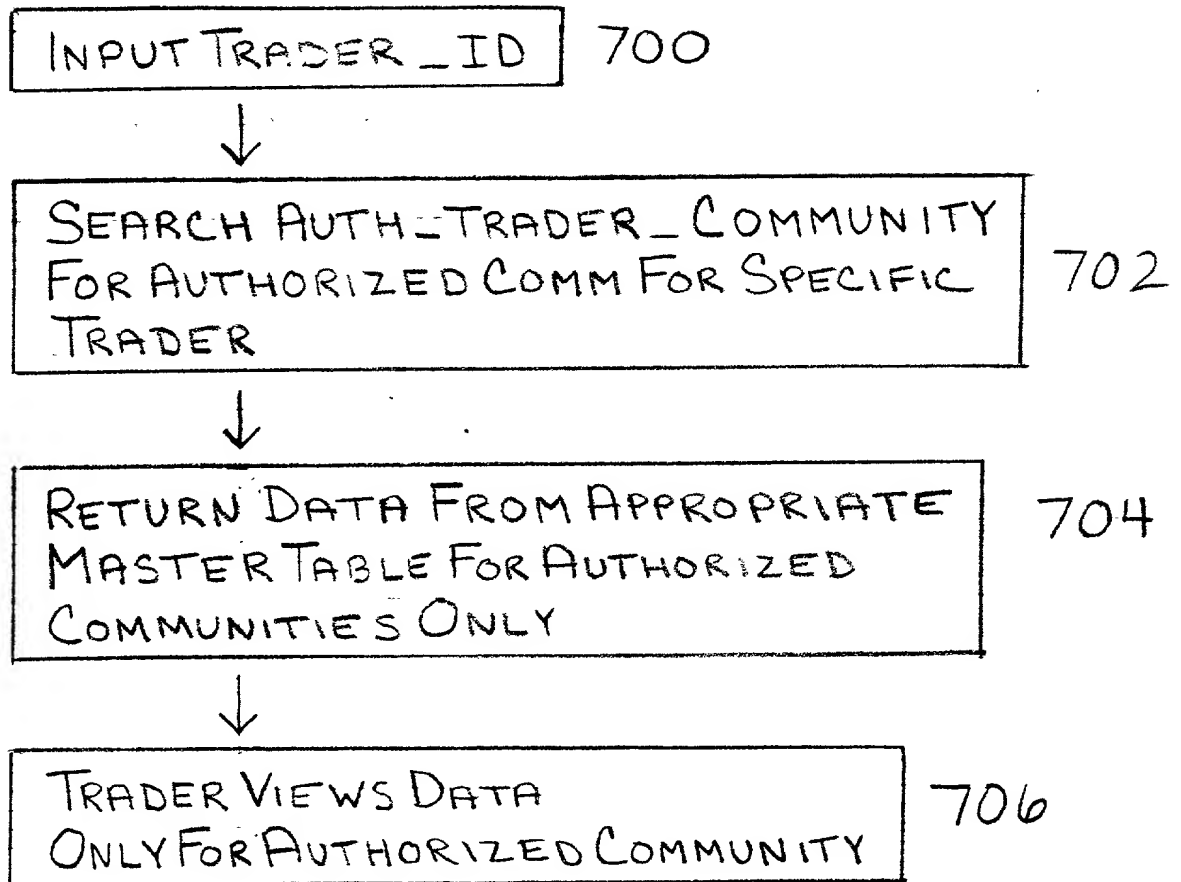


FIGURE 20

Demographics		Education		Occupation		Income		Health		Lifestyle		Social		Environment		Other															
Variable	Mean	SD	Variable	Mean	SD	Variable	Mean	SD	Variable	Mean	SD	Variable	Mean	SD	Variable	Mean	SD	Variable	Mean	SD											
Age	45.2	12.5	Gender	Male	52.3	Female	47.7	12.1	Marital Status	Married	65.4	Single	34.6	12.3	Divorced	12.1	Widowed	7.1	11.9	Religion	Christian	78.2	Muslim	19.8	Hindu	2.0	Buddhist	0.1	Other	0.0	11.5
Age	45.2	12.5	Gender	Male	52.3	Female	47.7	12.1	Marital Status	Married	65.4	Single	34.6	12.3	Divorced	12.1	Widowed	7.1	11.9	Religion	Christian	78.2	Muslim	19.8	Hindu	2.0	Buddhist	0.1	Other	0.0	11.5
Age	45.2	12.5	Gender	Male	52.3	Female	47.7	12.1	Marital Status	Married	65.4	Single	34.6	12.3	Divorced	12.1	Widowed	7.1	11.9	Religion	Christian	78.2	Muslim	19.8	Hindu	2.0	Buddhist	0.1	Other	0.0	11.5
Age	45.2	12.5	Gender	Male	52.3	Female	47.7	12.1	Marital Status	Married	65.4	Single	34.6	12.3	Divorced	12.1	Widowed	7.1	11.9	Religion	Christian	78.2	Muslim	19.8	Hindu	2.0	Buddhist	0.1	Other	0.0	11.5
Age	45.2	12.5	Gender	Male	52.3	Female	47.7	12.1	Marital Status	Married	65.4	Single	34.6	12.3	Divorced	12.1	Widowed	7.1	11.9	Religion	Christian	78.2	Muslim	19.8	Hindu	2.0	Buddhist	0.1	Other	0.0	11.5
Age	45.2	12.5	Gender	Male	52.3	Female	47.7	12.1	Marital Status	Married	65.4	Single	34.6	12.3	Divorced	12.1	Widowed	7.1	11.9	Religion	Christian	78.2	Muslim	19.8	Hindu	2.0	Buddhist	0.1	Other	0.0	11.5
Age	45.2	12.5	Gender	Male	52.3	Female	47.7	12.1	Marital Status	Married	65.4	Single	34.6	12.3	Divorced	12.1	Widowed	7.1	11.9	Religion	Christian	78.2	Muslim	19.8	Hindu	2.0	Buddhist	0.1	Other	0.0	11.5
Age	45.2	12.5	Gender	Male	52.3	Female	47.7	12.1	Marital Status	Married	65.4	Single	34.6	12.3	Divorced	12.1	Widowed	7.1	11.9	Religion	Christian	78.2	Muslim	19.8	Hindu	2.0	Buddhist	0.1	Other	0.0	11.5
Age	45.2	12.5	Gender	Male	52.3	Female	47.7	12.1	Marital Status	Married	65.4	Single	34.6	12.3	Divorced	12.1	Widowed	7.1	11.9	Religion	Christian	78.2	Muslim	19.8	Hindu	2.0	Buddhist	0.1	Other	0.0	11.5
Age	45.2	12.5	Gender	Male	52.3	Female	47.7	12.1	Marital Status	Married	65.4	Single	34.6	12.3	Divorced	12.1	Widowed	7.1	11.9	Religion	Christian	78.2	Muslim	19.8	Hindu	2.0	Buddhist	0.1	Other	0.0	11.5
Age	45.2	12.5	Gender	Male	52.3	Female	47.7	12.1	Marital Status	Married	65.4	Single	34.6	12.3	Divorced	12.1	Widowed	7.1	11.9	Religion	Christian	78.2	Muslim	19.8	Hindu	2.0	Buddhist	0.1	Other	0.0	11.5
Age	45.2	12.5	Gender	Male	52.3	Female	47.7	12.1	Marital Status	Married	65.4	Single	34.6	12.3	Divorced	12.1	Widowed	7.1	11.9	Religion	Christian	78.2	Muslim	19.8	Hindu	2.0	Buddhist	0.1	Other	0.0	11.5
Age	45.2	12.5	Gender	Male	52.3	Female	47.7	12.1	Marital Status	Married	65.4	Single	34.6	12.3	Divorced	12.1	Widowed	7.1	11.9	Religion	Christian	78.2	Muslim	19.8	Hindu	2.0	Buddhist	0.1	Other	0.0	11.5
Age	45.2	12.5	Gender	Male	52.3	Female	47.7	12.1	Marital Status	Married</																					

750



752



754



756

FIGURE 21

00505057 060100

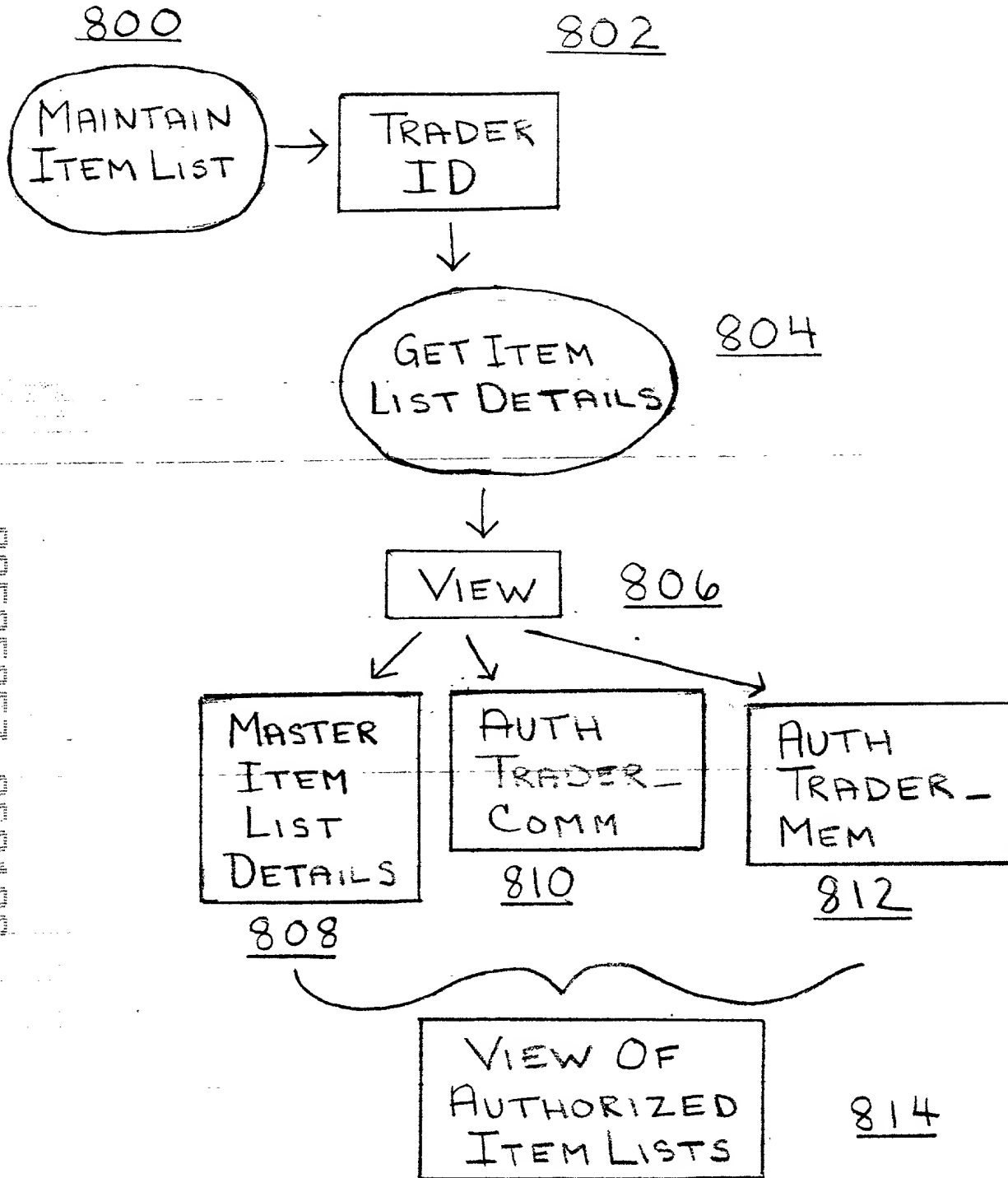


FIGURE 22

007090" 25052560

Maintain Item List		More	History
Community	Unistar		857
Member ID	095547468		
Member Name	Ogden, Newell & Welch		858
List Type	Favorite		
List ID	Boise, Tina		862
Sequence	10		
Item Member ID	178923231		864
Item Member Name	Boise Cascade Office Products		868
Item	A25539-YW		
Item Description	PAD NOTE,YW,1.5"X2"		872
Unit Measure	PK		
Quantity	1.0000000		876
Instk / Output	1		

OK Cancel Help

Figure 23

00T090" 25058560

Maintain Item List Search					Sequence	
Community	Member ID	List Type	List ID	Item		
Unistar 900		Favorite	Boise, Tina			
Community	Member ID 902	List Type 906	List ID	Item	908 Sequence	
Unistar	096547468	Favorite	Boise, Tina	S7186592	640	
Unistar	096547468	Favorite	Boise, Tina	S740858	650	
Unistar	096547468	Favorite	Boise, Tina	A2680-9	660	
Unistar	096547468	Favorite	Boise, Tina	S292162A	610	
Unistar	096547468	Favorite	Boise, Tina	S3564-01	620	
Unistar	096547468	Favorite	Boise, Tina	S712881	630	
Unistar	096547468	Favorite	Boise, Tina	S1140195A	580	
Unistar	096547468	Favorite	Boise, Tina	S192295A	590	
Unistar	096547468	Favorite	Boise, Tina	S2182TLD	600	
Unistar	096547468	Favorite	Boise, Tina	P3C811WP	550	
Unistar	096547468	Favorite	Boise, Tina	P3C814CP	560	
Unistar	096547468	Favorite	Boise, Tina	S11382920	570	
Unistar	096547468	Favorite	Boise, Tina	P2R4290	520	
Unistar	096547468	Favorite	Boise, Tina	P2R4430	530	
Unistar	096547468	Favorite	Boise, Tina	P3C6925GG	540	
Unistar	096547468	Favorite	Boise, Tina	P290BK	490	

Search

Page Up

Page Down

Select

Print

Apply

OK

Cancel

Help

Warning: Applet Window

Fig 24

COMMUNITY 1010

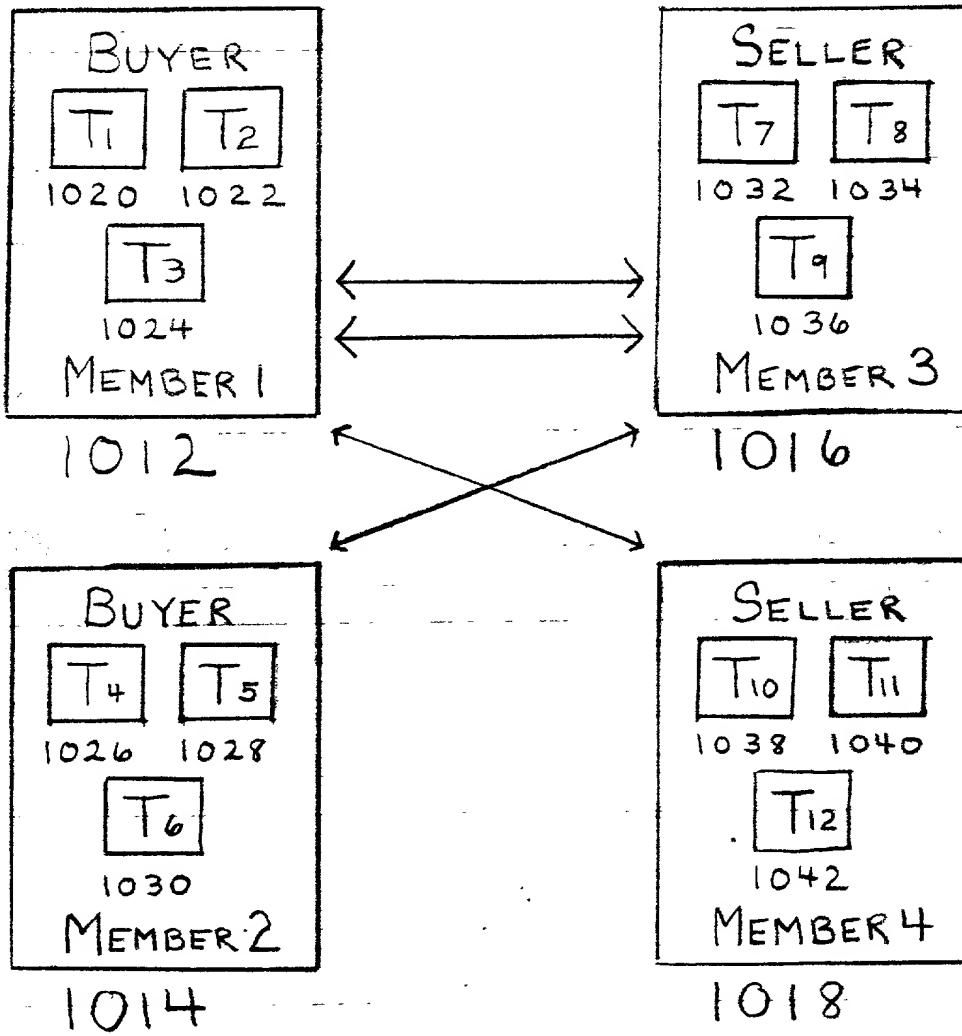


FIG 25A

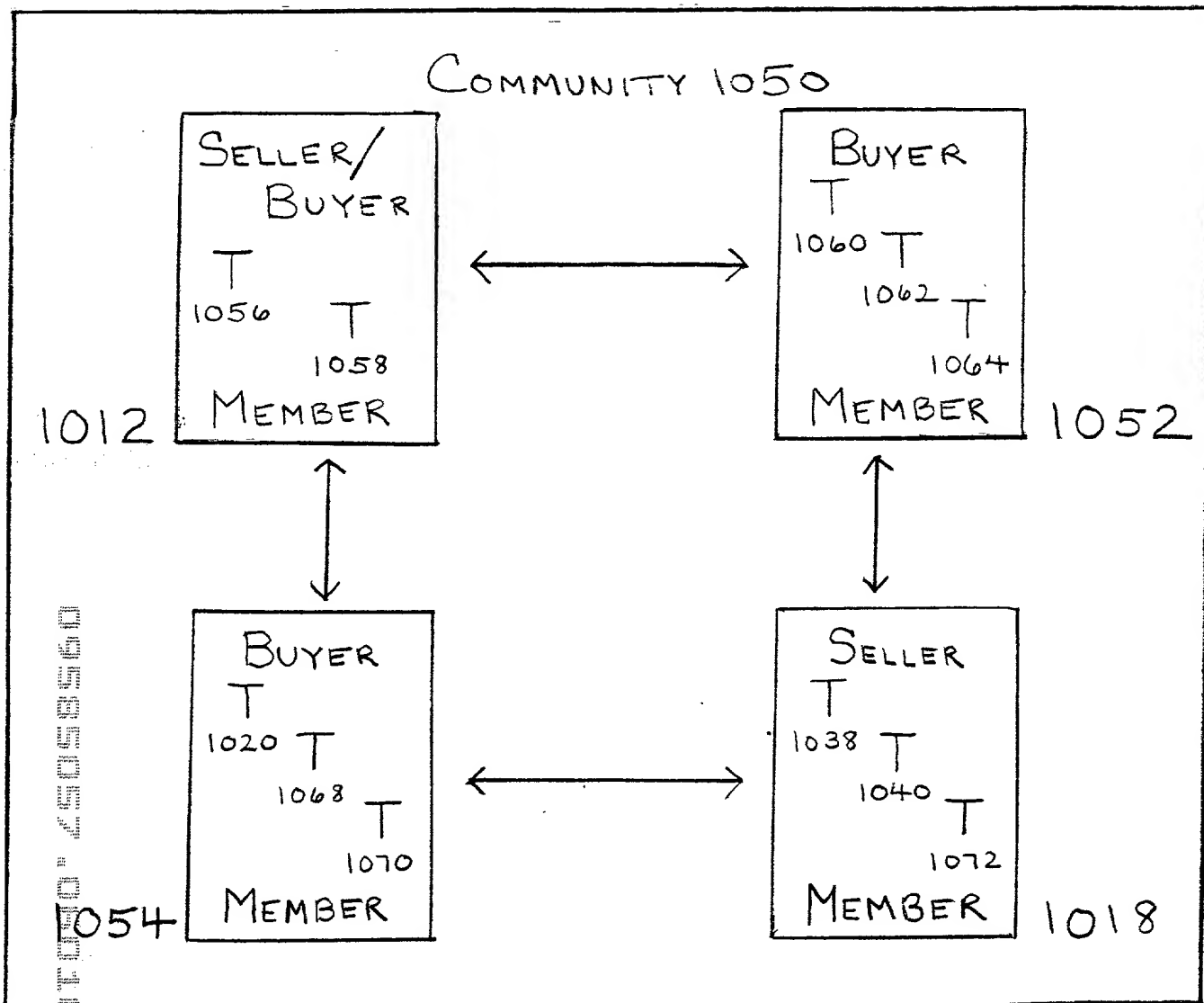
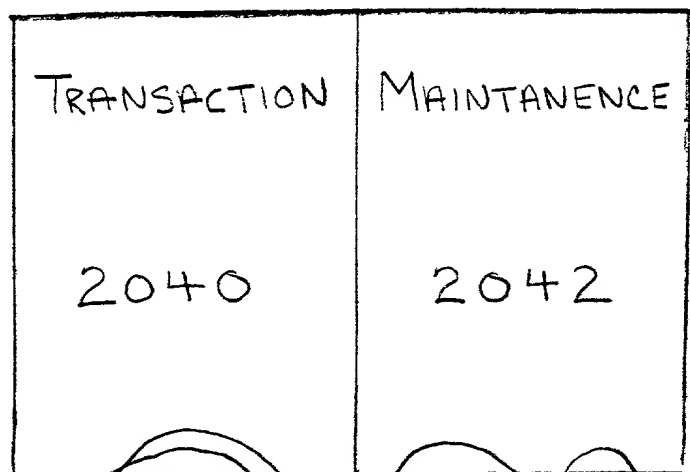


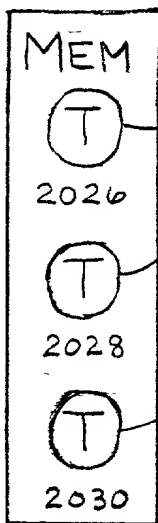
FIG 25B

COMMUNITY 2020



38

2022



2024

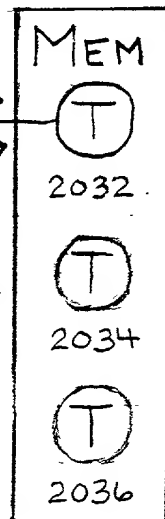


Fig 26

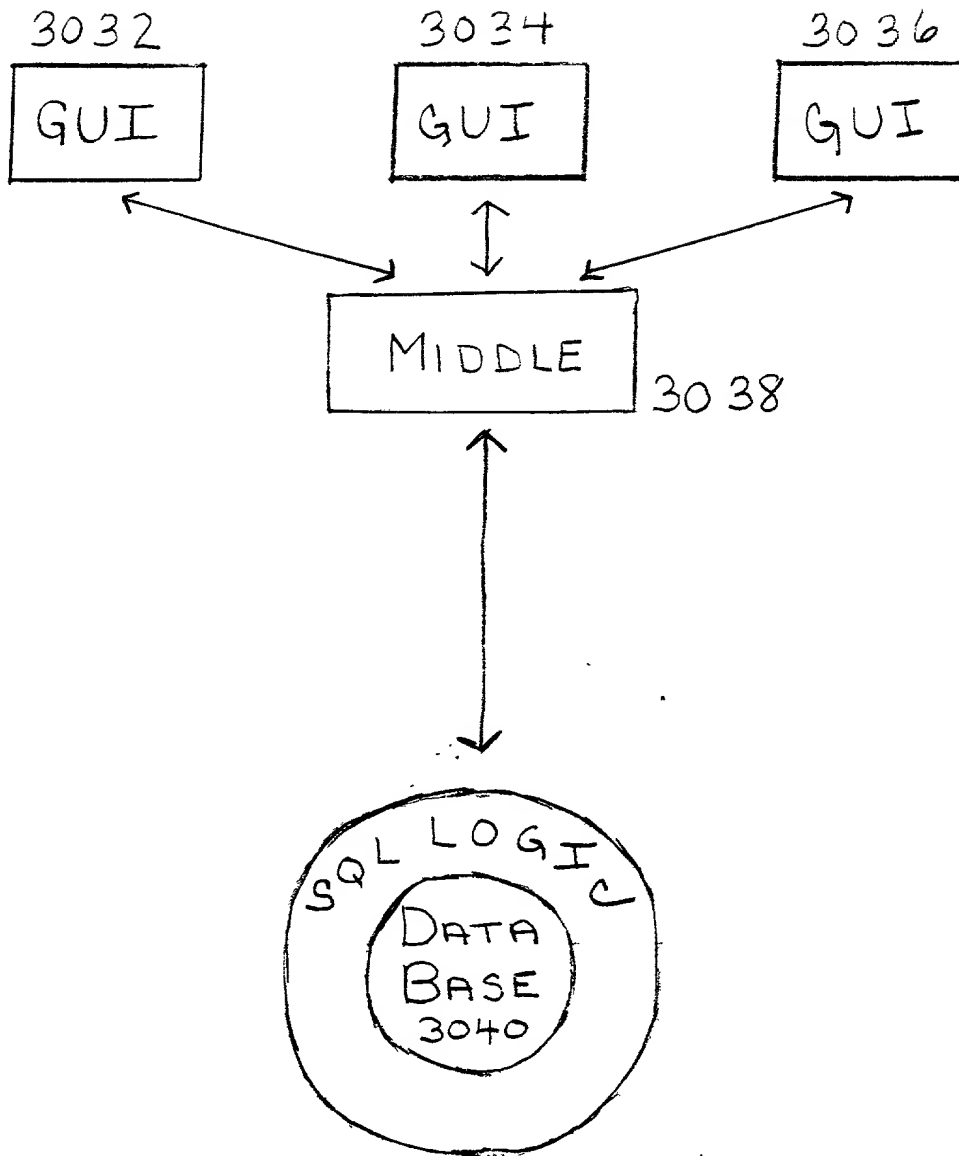


FIG 27

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

METHOD AND APPARATUS FOR MANAGING DATA IN A BUSINESS TO BUSINESS ENVIRONMENT,

the specification of which is attached hereto unless the following box is checked:

☐ was filed on _____ as
United States Application Number or PCT International Application Number _____
and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

Priority Not Claimed

(Number) (Country) (Day/Month/Year Filed)

☐

(Number) (Country) (Day/Month/Year Filed)

☐

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

(Application Number) (Filing Date)

(Application Number) (Filing Date)

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Number)

(Filing Date)

(Status - patented, pending, abandoned)

(Application Number)

(Filing Date)

(Status - patented, pending, abandoned)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Paul F. Prestia	Reg. No. 23,031	Lawrence E. Ashery	Reg. No. 34,515	Mark J. Marcelli	Reg. No. 36,593
Allan Ratner	Reg. No. 19,717	Christopher R. Lewis	Reg. No. 36,201	Jack J. Jankovitz	Reg. No. 42,690
Andrew L. Ney	Reg. No. 20,300	Robert L. Andersen	Reg. No. 25,771	Jonathan H. Spadt	Reg. No. 45,122
Kenneth N. Nigon	Reg. No. 31,549	Joshua L. Cohen	Reg. No. 38,040	Christopher I. Halliday	Reg. No. 42,621
Kevin R. Casey	Reg. No. 32,117	Daniel N. Calder	Reg. No. 27,424	Scott A. McKeown	Reg. No. 42,866
Benjamin E. Leace	Reg. No. 33,412	Louis W. Beardell, Jr.	Reg. No. 40,506		
James C. Simmons	Reg. No. 24,842	Jacques L. Etkowicz	Reg. No. 41,738		

Address all correspondence to: Lawrence E. Ashery

Ratner & Prestia, Suite 301, One Westlakes, Berwyn, P.O. Box 980, Valley Forge, PA 19482-0980

Address all telephone calls to: Lawrence E. Ashery at (610) 407-0700.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor (given name, family name) Joseph H. Holland

Inventor's signature _____ Date _____

Residence Barrington, IL

Citizenship USA

Post Office Address 460 Shady Lane

Barrington, IL 60010

Full name of second joint inventor, if any (given name, family name) Mark W. Byrd

Second Inventor's signature _____ Date _____

Residence Downingtown, PA

Citizenship USA

Post Office Address 209 Kelly Lane

Downingtown, PA 19335

☐ Additional inventors are being named on separately numbered sheets attached hereto.